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PANTEX PLANT CITIZENS' ADVISORY BOARD

806/372-3311 (phone) 806/372-3999 (fax)

DRAFT MEETING SUMMARY

TWENTY EIGHTH MEETING

Tuesday, September 24, 1996
4:00 - 8:30 p.m.
Amarillo College
Oak Acorn Room
Amarillo, Texas

INTRODUCTION

The twenty-eighth meeting of the Pantex Plant Citizens' Advisory Board (PPCAB) was held on Tuesday, September 24, 1996 at Amarillo College in the Oak Acorn Room, Amarillo, Texas The meeting began at 4·00 p m. and adjourned at 8 30 p m The agenda included the following

* Task Force reports including Environmental Restoration
* Updates from the Department of Energy (DOE), including occurrence reports and an update from the ATSDR (Agency for Toxic Substances and Disease Registry)
* Subcommittee reports including Policy & Personnel and Nominations.
* Panel discussion on the MOX fuel process and its viability in the U S

PPCAB Members in Attendance Pam Allison, Sam Arkaifie, Mavis Belisle, John Blakley, Jr , Galen Boothe, Randy Braidfoot, Johnny Burrell, Louise Daniel, Bob Juba, Janette Kelley, Denise Price, Frank White, C E Williams, and Ronald Zerm

PPCAB Members not in Attendance. Doris Berg Smith, Guyon Saunders, Beverly Gattis and Tonya Kleuskens .

Ex-Officio Members in Attendance: Boyd Deaver, Texas Natural Resources Conservation Commission (TNRCC), Thomas Edwards, Office of the Texas Attorney General, Joe Martillotti, Texas Department of Health, Bureau of Radiation Control, Roger Mulder, Office of the Governor; and Tom Williams, DOE

Ex-Officio Members not in Attendance Judith Black, Environmental Protection Agency, Joe Panketh, TNRCC and Gerald Johnson, DOE.

Resource People in Attendance Bruce Campbell, Mason & Hanger; and Stacy Mansoor, Office Administrator.

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Meeting Facilitator· Marilyn Van Petten, Van Petten Resource Development

Observers· Gary Baker, Paula Breeding, Elena Capsuto, Julie Carter, Richard Collins, Richard Edmondson, Allen Finegold, Joe Gantos, Steve Goodrum, Tom Halliday, Mike Hanson, Bill Harris, Bev Harris, Ralph Haurwitz, Nancy Ingram, John Lemming, Jennifer Lyke, Jim McBride, Jim McConnell, Bob Moyer, K L. Peddicord, William H. Seewald, Cathy Teague, Tom Walton, Bill Weida, Lynn White, and Gary Williams

ATTACHMENTS

Attachments distributed to board members and guests during the meeting are not included here Copies will be sent to board members who were absent Others may obtain attachments by contacting Stacy A. Mansoor, Office Administrator, at 806/372-3311 or by visiting a DOE Reading Room.

Mailed before the Meeting to the PPCAB

Draft Meeting Summary for August 27, 1996 meeting, Draft Agenda for September 24, 1996 meeting; DOE Occurrence Reports, Task Force and Subcommittee Minutes

Enclosed with these Meeting Notes for PPCAB Members and Ex-Officios

Draft Agenda for October 22, 1996 meeting, DOE Occurrence Reports, Subcommittee and Task Force Minutes.

Distributed to PPCAB at Meeting and Sent to Absentees

Task Force and Subcommittee Minutes, ATSDR information packet, Environmental Task Force minutes, NIOSH research activities description; letter from DOE to C.E Williams, PGWCD.

OPENING COMMENTS

Marilyn Van Petten welcomed everyone, made opening remarks, and reviewed the agenda The board approved the August meeting summary as mailed, with changes noted by Elena Capsuto

CO-CHAIRS' REPORT

Louise Daniel and Ron Zerm reminded the board that the MOX fuel panelists will be featured on the KACV-TV production, "Perspectives", and invited all present to attend Daniel directed all members to a letter provided by NIOSH, National Institute for Occupational Safety and Health, informing the board of a planned study of the Pantex workforce

Daniel polled the board to determine if members are interested in participating or co-sponsoring the DOE Risk Assessment workshop suggested at the August meeting Members indicated a great deal of interest in the topic, so the workshop will be planned

Ron Zerm reported on the MOX fuel workshop held August 29, 1996, in Austin. He stated that the workshop was productive and informative Roger Mulder added that a summary of the proceedings is in its second draft and will be available for distribution in the near future Mavis Belisle provided a copy of the meeting handouts to Stacy Mansoor which will be available for interested parties. She also stated that a video of meeting footage (7 hours) is available for viewing.

Zerm directed board members to information provided to clarify radiation comments made during the groundwater discussion at the August board meeting He regretted the community's loss of a pro-active approach due to circumstances involved in the Cockrell well issue by the DOE in off-site groundwater remediation efforts He referenced comments made concerning Dichlorethane (DCA) contamination on the Texas Tech property and stated that they contained erroneous information. Zerm commented CERCLA does not have a statute of limitations on environmental issues.

SUBCOMMITTEE REPORTS

Policy and Personnel

Pam Allison presented a bylaws change for first approval

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II FUNCTIONS, SCOPE & ACCOUNTABILITY

C Accountability

7. Meetings shall be open to the public and adequate advance notice must be given. Meetings shall be conducted ~~on varying days and~~ at varying times and locations to encourage maximum public and board participation

Marilyn Van Petten commented that most board members prefer to set a date for meetings (e g fourth Tuesday). Randy Braidfoot questioned why the time and location change with each meeting. Pam Allison explained it is to meet the public's needs better Bob Juba agreed with Braidfoot, adding that there seems to be the same public attendance regardless of time or location

In response to a query, Tom Williams stated that there is no FACA requirement mandating location or time variations for meetings He added that the only requirement is the meeting notice must appear in the Federal Register

Louise Daniel agreed with Juba and Braidfoot's comments, stating that there seems to be no difference in meeting attendance Pam Allison suggested removing both "varying" from the bylaws change. Marilyn Van Petten solicited comments from the public, there were no concerns raised by those present The change passed on first reading by consensus as follows

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Allison reported on the survey conducted at the August board meeting concerning recording PPCAB meetings and stated that the subcommittee recommends no action on the issue at this time

Allison reported that the Policy and Personnel Subcommittee and the Community Outreach Subcommittee will submit recommendations for a PPCAB Annual Report and Self-Evaluation at the October board meeting

Nominations and Membership

Ron Zerm reported that Willie Beverly has resigned from the board He thanked Willie for his service to the PPCAB Board members requested a certificate be presented to Willie for his service to the PPCAB Zerm then presented the nomination of Stella Devers for the required second reading to fill Belinda Gonzales Taylor's vacated seat She was approved by consensus and welcomed to the board Zerm stated that the subcommittee will review a record of member absences and present a recommendation at the October meeting

TASK FORCE REPORTS

Environmental Restoration

Louise Daniel reported that Dan McGrath, DOE, presented an overview of the 1995 Site Environmental Report to the task force at the September 12 meeting She reminded all present that Dr Randy Charbeneau is scheduled to present an overview of Pantex groundwater activity on October 10 All are invited to attend

UPDATES

Agency for Toxic Substances Disease Registry (ATSDR) Report

Rick Collins, Senior Scientist, (ATSDR), updated the board He described the steps in the report process and said that it is hoped the Site Summary document will be available for release at the October meeting The board will have approximately two weeks to return any comments

He provided a site location map and a population distribution map There were concerns voiced on the presentation of the variables and whether or not the information is easily understood Thomas Edwards questioned the exclusion of the Texas Tech property on the Pantex map, especially since there are outfalls to the Tech property Collins explained it is a buffer zone Johnny Burrell asked when the population distribution map was developed and Collins reported the data is from the 1990 census. Burrell commented the map does not show all current residences near the plant

There was lengthy discussion on the 1-mile boundary marked on the maps Collins will determine how the graph was developed and report back to the board at the October meeting Collins stated the area of greatest concern is between one and five miles Again, there were questions raised on whether the graph colors presented the cumulative population or the difference in population between each area. Collins will determine the source of and clarify the information at the October meeting Thomas Edwards suggested that the population information be provided per square mile rather than per census block, if possible Joe Martillotti stated that Collins might contact the Environmental Restoration department at Pantex, the department could possibly provide a better population density map for ATSDR use.

Mavis Belisle asked the definition of women in their reproductive years Collins responded that the definition is women aged 15 to 44, per the 1990 census guidelines She also asked why the geographical center was used and not emission points as the center of the maps Collins replied there is not one central emission point so the geographical center will most likely work better

Tom Williams cautioned the group, stating it is important to make only reasonable requests of the ATSDR. Collins stated the points raised by the board can help him develop a better initial document. The board/public input can make the final report development much easier because many concerns will have been addressed Collins and Dr Paul Charp, Senior Health Physicist, will present current conclusions regarding radiological contamination and resultant health effects at the October meeting.

Occurrence Reports

Mike Hanson, DOE referred back to report #154, questioned at the August meeting He stated the report concerned pre-operational checks, surveillance is occurring and the process is undergoing definition.

He presented a graph of the frequency of occurrences Louise Daniel asked why there was an increase in occurrences Hanson responded that it may be due to better reporting practices He cited the example of an entire HE (high explosives) service magazine being a RMA (Radioactive Materials Area) whereas only a small area should have been defined as a RMA He explained the containment lines were repainted to indicate the smaller area and some material cans were not moved immediately to the repainted area Thus, the location of the material cans in an unapproved area was a reportable incident

Hanson presented a distribution graph of reportable incidents Five occurrences concerned radioactive material, two were RAMS (Radiation Alarm Monitoring Systems), two were evacuation incidents, four were nuclear explosive safety concerns, five unusual occurrences, and four were critical safety systems

Hanson highlighted several incidents including Report #177, listed in the 'other' category He explained that concrete was removed from a building and a duct installed During the concrete removal some grout was cracked An investigation was conducted which determined that no degradation of the facility had occurred

Report #178 concerned exceedence of fissile materials limits in Building 12-84, Bays 3 and 5 The limits were raised without concurrence by the DOE Limits were lowered by Mason & Hanger to the original limit No HE or Pu limits were exceeded

Report #179 dealt with a lapsed quarterly surveillance requirement The facility operated without proper surveillance checks from July 26 to August 13 When discovered, the surveillance was conducted and the facility was returned to operational status

Mavis Belisle asked when the incident occurred in report #165 and the length of time between the incident and the employee's removal from PAP (Personnel Assurance Program) Hanson responded that he was not sure and, due to personnel issues involved, was unsure what information could be disclosed

Belisle also asked about report #166 She asked how the incidents were discovered Hanson responded it was through document review and surveillance, and perhaps a physical inventory

Randy Braidfoot asked how the cable was cut in report #168 Hanson explained there are on-going construction activities at the plant John Bernier interjected that every precaution is taken to identify potential problem areas through the use of blueprints and drawings Braidfoot asked whether gas lines have ever been cut Hanson replied that they have, but communications lines are more often cut Bob Juba stated that from a public works standpoint several lines cause an unavoidable problem

Braidfoot asked what employees are enrolled in PAP Hanson explained that nuclear weapons area employees are enrolled in the program, adding that an employee who exhibits inappropriate behavior is moved to a non-PAP area Galen Boothe, a Pantex employee, gave some insight on the PAP program He explained that employees watch one another and report any suspicious activity He added that employees are not allowed to be alone with any nuclear weapon or material

Roger Mulder asked about the continuing issue of suspect counterfeit (S/C) fasteners He asked whether the offending vendors are contacted Hanson responded that vendors are qualified through sampling efforts and vendors are eliminated who do not meet standards He added most problems reported are historical and the fasteners are a grade or two lower than specified Boothe commented he has found inferior S/C fasteners at both home and work Frank White stated that sampling does occur at a rate of 3 or 4 per 1000 He added that often there are no problems with the lower grade; oftentimes the problems may not occur for quite some time

Steve Goodrum, DOE, presented a briefing on Occurrence #185 He explained the dismantlement process of a B-61 Mod.2 weapon unit. He provided photos of the process He described it by stating that the unit is first transported to a bay, undergoes a gas sampling test of the interior of the unit and a nut is removed to identify any contamination If contamination exists, Radiation Safety is contacted and then the labs are notified for directions on how to proceed If there is no contamination, the unit is placed in a stand to continue the disassembly process and additional sampling is conducted It was at this point that contamination was discovered on the unit The amount of radiation was 9 nanograms, which is a fractional amount

Goodrum explained that the occurrence was well-confined and controlled. He provided photos of vacuum cleaners which are used to clean the area Radiation Safety found a minor amount of radiation on equipment and tools No contamination to workers occurred He explained that the laboratories are determining formal directions to continue disassembly activities on the B-61 Mod.2. Goodrum explained that contingencies are identified through the Seamless Safety program He stated that they are working with the laboratories so that the highest possible safety standards are maintained

Louise Daniel commented that it seemed unusual to have the same problem on two units in one day. Goodrum replied that though there seemed to be two problems at first, there was actually only one unit with a problem.

Mavis Belisle questioned the difference in manganese concentration on-site versus off-site cited in report #174. Hanson responded he is unsure but the TNRCC investigation will show the comparative difference Boyd Deaver confirmed that TNRCC did receive notification

Belisle asked whether the components mentioned in report #184 were mixed waste and whether they were shipped off-site. Hanson replied there was no indication of hazardous material on the bags but he will find out particulars of the incident and report back to the board

MOX FUEL DISCUSSION PANEL

Panel participants included Dr K Lee Peddicord, ANRCP, Dr William Weida, Professor, Colorado College, Mr Bob Moyer, representative, Cogema Inc , and Mr Paul Leventhal, President, NCI Board members Ronald W Zerm and Bob Juba also participated

Dr. K. Lee Peddicord

Dr Peddicord presented an overview of possible options for future Pantex missions and a brief history of national security issues surrounding the future use of nuclear power He identified the U S. plutonium (Pu) inventory as follows· 13% is fuel grade, 1% is reactor grade, 86% is weapons grade The total Pu inventory is 99 5 metric tons He outlined the possible Pu disposition options under consideration by DOE

He noted, that under NEPA, the "no action" alternative must be included For storage activities, certain current nuclear facilities would be upgraded and Pu might be collocated and consolidated

The disposition activities include a "no action" option, again as required by NEPA Pit disassembly and Pu conversion are disposition alternatives Pu conversion can be either direct disposal (geologic disposal, ceramic encasement, or vitrification) or energy utilization (MOX) In either case, the goal is meeting the spent fuel standard He defined the DOE spent fuel standard to make plutonium roughly as inaccessible for weapons use as the much larger and growing stock of plutonium in civilian spent fuel Peddicord presented a diagram of the Light Water Reactor (LWR) spent fuel assembly He stated that the goal is to make weapons grade Pu as unattractive as possible

He explained that there are three disposition options under consideration deep borehole, immobilization, and MOX fuel All three have implications for Pantex The first, deep borehole, involves the placement of the weapons material into a container and burying it The second option, immobilization, would involve encasing the material in either ceramic or glass and then storing at either WIPP or Yucca Mountain The last option, MOX fuel, would convert either a commercial reactor or a partially completed reactor to burn MOX fuel He described the material pathways and added that a combination MOX and immobilization is the most likely solution

Peddicord stated that a pyroprocessing method, ARIES , is being considered for removing bonded Pu DOE is focusing on dry processes to eliminate liquid waste streams A great concern is the removal of gallium These are technical issues to be determined in the future He described the pit conversion process and then addressed the question, "What is MOX fuel?" He presented

an overview of the MOX pellet fabrication process and stated that 250,000 fuel pins have been fabricated in Great Britain, France, and Belgium

He further stated that an issue of paramount importance is how best to engage Russia in disposition activities Reportedly, Russia wants only 1% of its Pu stores to be immobilized and views its Pu as a national treasure Peddicord reiterated that uncontrolled Pu in a weapons-grade form presents a clear and present danger to world security

Dr. William J. Weida

Dr. Weida, economist and professor at Colorado College, presented his views on economic issues surrounding MOX fuel He began by stating that just because something is possible does not mean it is feasible. He explained that since 1992 there have been many national conferences regarding the feasibility of MOX fuel in the U S He stated that MOX is up to as much as six times more expensive to use than LEU (low enriched uranium) He predicted the need for government subsidy of any future U.S. MOX facility He also added that he believes end-user (consumer) power rates would be raised as well

He discussed "significant cost uncertainties" from several different problems that arise when government is involved in an otherwise private venture He stated that subsidies would be required to complete the long-term Pu disposition activities and this would translate into higher subsidies for the provider, thus higher cost to the taxpayer The six utilities that have expressed an interest in pursuing this as an energy option have indicated that the government must pay for the entire process plus an incentive fee, get the MOX power produced without charge, and be able to sell the tritium by-product to the government Weida stated that the subsidy could be 2 - 4.5 billion dollars He identified another problem, the government cannot project long-term funding commitments accurately beyond two-years

Weida stated that LEU would no longer be competitive if MOX is introduced. The government would then have to subsidize both LEU and MOX reactors He also questioned the appropriateness of Pantex's infrastructure to provide the MOX facility He stated that he believes the MOX option is economically impossible He also commented that the inclusion of a MOX facility at Pantex could result in a net employment loss His overall point was "MOX fuel is not the most cost-effective disposition option being considered at this time "

Mr. Bob Moyer

Mr Moyer, Cogema, Incorporated, presented and explained a graph of the nuclear fuel cycle He also presented a video describing the company's Melox facility and MOX process in France Cogema is the largest producer of MOX fuel world-wide The video will be available for check-

out at the PPCAB office He gave an overview of the use of MOX fuel in Europe and stated that there are 8 operational reactors in Europe A total of 470 metric tons of MOX fuel have been produced to date

He listed the objectives of the MOX fuel assembly, adding that it is essentially a dry process The waste from the plant is much lower than originally anticipated Melox is the first large plant to exist and will serve as a benchmark for future projects

Mr. Paul Leventhal

Mr Leventhal, President, Nuclear Control Institute, addressed several non-proliferation options He stated that his organization is not anti-nuclear but anti-plutonium He added that the MOX option is not a good idea in his opinion He stated that all present civilian reactors can run on LEU (low enriched uranium).

Leventhal stated that the Institute advocates immobilization first, then deep borehole as the preferred disposition options He commented that a MOX facility run by a contractor, as a commercial venture will allow cost-cutting measures that may sacrifice the highest levels of security (e g the use of SSTs to transport material) Leventhal then stated that the impression given by Mr Moyer is that use of MOX is commonplace which he believes to be inaccurate He also commented that, if the MOX option is introduced, only 5% of U S power could be derived from this source France derives 27% of its power from MOX fuel

He discussed the differing viewpoints and theories regarding whether civilian-grade Pu can be used to produce weapons

His overall viewpoint is that MOX fuel is a dangerous disposition approach

Question/Answer Session

Louise Daniel asked Moyer the physical size, the number of employees and the training involved at the Melox facility He responded that the Melox facility is 50% larger than any possible U S facility The site consists of two buildings, fabrication (6500 m^2) and conditioning (3100m^2) There are 390 employees at the facility and those employees are trained in proper Pu handling practices Daniel further requested that all presenters provide the board with copies of their presentations

Thomas Edwards asked how the determination that Pu has met the spent fuel standard is made Peddicord stated there are non-technical criteria that must be met For example, in the

immobilization process a highly radioactive large mass (bulk package) of material is developed It is believed this would make any proliferation activities very difficult Peddicord added that while there is no barrier, the sheer size of the package makes the spent fuel unattractive and inaccessible

He explained that the deep borehole option does not change the isotopics, but the depth of the materials poses great retrieval difficulty He also stated that spent fuel can be changed to weapons-usable material He concluded by saying that all three disposition options would satisfy the spent fuel standard He reiterated the need for engaging the Russians in Pu deposition activities.

Paul Leventhal commented that Japan is recycling its Pu indefinitely but he believes immobilization is the best disposition option

Mavis Belisle asked the panel how Israel, India, Pakistan, etc obtained material for their nuclear programs. Leventhal responded it was under the guise of developing reprocessing technology for civilian purposes The countries listed by Belisle are so-called rogue states He added, in his opinion, Pantex could handle the mission but this would legitimate the technology for the rest of the world Leventhal added that the introduction of a MOX facility to the U S could enable proliferation activities

Zerm questioned how Pu could be taken from a facility with all security measures in place Leventhal replied there are amounts of Pu in low-level waste; which is often not properly policed in some countries. He added that the proliferating states find exploitable vulnerabilities and use them to their advantage Bob Moyer commented that in all known cases of nuclear proliferation the usage was building clandestine plants, not material theft Leventhal then cited Iraqi operations as an example of proliferation activities

Joe Martillotti asked if the can/canister option is a possible mission for Pantex Peddicord replied that vitrification would most likely not be at Pantex, Leventhal disagreed Peddicord then discussed the internal recycling of waste streams in the MOX process, adding that the MOX is a dry process with modest waste streams

Paul Leventhal discussed the problem of "hold up" in the MOX process He described the Pu powder as similar to graphite, explaining that it will stick to equipment during the production processes. He added that Japan had 8kg of material missing and had to conduct a 'glovebox' clean out which was very expensive. Moyer replied that France, Belgium, and Great Britain are working to eliminate the 'hold-up' problem

C.E. Williams asked if any of the interested utility companies were located in Texas Weida responded that they were not located in Texas Peddicord added 3 to 7 reactors would be required for a period of 20 years for the MOX fuel use Moyer also commented that MOX is only part of Cogema's business, 15% is MOX and 50% is reprocessing and recycling

Galen Booth asked Moyer about the radiation limit for workers He stated that he was unsure but can obtain the information Dr Peddicord was questioned about the pressure effect on material in the deep borehole option He replied that there is no background information on the subject, but it seems the easiest disposal option and least satisfactory to Russia

In response to a query, Moyer explained the relationship between Cogema and the French Government, 89% of Cogema is owned by FAEC and 11% by Totale, a French oil company

CLOSING COMMENTS

Van Petten concluded the meeting by offering brief closing remarks

Meeting adjourned at 8.30 p m